217/782-2113

CONSTRUCTION PERMIT - NSPS -- REVISED

PERMITTEE

Ameren Energy Generating Co.
Attn: Michael L. Menne
1901 Chouteau Avenue
P.O. Box 66149
St. Louis, Missouri 63166-6149

Application No: 99020071 I.D. No.: 053803AAL
Applicants Designation: GCPP Date Received: July 27, 2000
Subject: Gas Turbines (Power Production)
Date Issued: October 24, 2000
Location: 545 N. Jordan Drive, Gibson City, Ford County

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of two combustion turbines, fuel heater and two fuel oil storage tanks as described in the above referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

1a. The turbines are subject to the New Source Performance Standard (NSPS) for Stationary Gas Turbines, 40 CFR 60, Subpart A and GG. The Illinois EPA is administrating NSPS in Illinois on behalf of the United States EPA under a delegation agreement.

b. The Permittee shall not emit into the atmosphere from any turbine any gases which contain nitrogen oxides (NO_X) in excess of the applicable standards pursuant to 40 CFR 60.332 (a)(1), except as allowed by 40 CFR 60.332(f).

c. The Permittee shall not emit into the atmosphere from any turbine any gases which contain sulfur dioxide (SO_2) in excess of 0.015 percent by volume at 15 percent oxygen and on a dry basis, or shall not burn any fuel which contains sulfur in excess of 0.8 percent by weight, pursuant to 40 CFR 60.333 (a) and (b).

d. At all times, the Permittee shall maintain and operate the turbines in a manner consistent with good air pollution control practice for minimizing emissions, pursuant to the NSPS, 40 CFR 60.11(d).

2. The turbines are affected units under the Acid Rain Deposition Control Program pursuant to Title IV of the Clean Air Act and are subject to certain control requirements and emissions monitoring requirements pursuant to 40 CFR Parts 72, 73 and 75. As affected units under the Acid Rain Program, the Permittee must also obtain an Acid Rain Permit for operation of the turbines in accordance with 40 CFR 70.30(a)(2)(ii) and 72.32(a).

3a. i. The only fuels fired in the turbines shall be natural gas and distillate fuel oil.

ii. The usage of fuel oil, total in the turbines, shall not exceed 37,000,000 gallons per year. This operational limitation is established to address PM emissions associated with use of fuel

oil in the turbines. Compliance with this limit shall be determined from a running total of 12 months of data.

iii. Distillate fuel oil with a sulfur content greater than 0.28 weight percent shall not be fired in the turbines.

b. Hourly emissions from each turbine shall not exceed the following limits, except when ice fog is deemed a hazard in accordance with 40 CFR 60.332(f):

Fuel Type	NO_X (lb/hr)	CO (lb/hr)	VOM (lb/hr)	SO_2 (lb/hr)	PM/PM_{10} (lb/hr)
Gas	136.0	83.0	7.0	1.0	15.5
Oil	242.0	105.0	20.0	410.0	126.0

These limits are based on manufacturer's data as provided in the permit application. (These limits may be revised by the Illinois EPA if the Permittee demonstrates that such limits would comply with applicable requirements.) Compliance with these limits shall be based on average emission determined by emission testing in accordance with Condition 9 (3-run average) or emissions monitoring in accordance with Condition 13 (24-hour average).

c. i. The total annual emissions from the turbines shall not exceed the following limitations. Compliance with these limitations shall be determined from a running total of 365 days of data.

Pollutant	Emissions (tons/year)
NO_X	245
CO	215
PM	249
SO_2	249
VOM	45

The above limits are established pursuant to 40 CFR 52.21, the federal rules for Prevention of Significant Deterioration of Air Quality (PSD). These limits ensure that the construction and operation of this facility project do not constitute a new major source pursuant to PSD.

ii. Daily emissions of NO_X and SO_2 shall be determined by the monitoring required by Condition 13.

iii. Daily emissions of CO, PM and VOM shall be determined from daily operating hours as measured in accordance with Condition 14(a) and turbine specific maximum hourly emission rates. These rates shall reflect the maximum emission from each turbine as specified above unless site-specific rates are developed pursuant to emission testing (Condition 9) or revised rates approved by the Illinois EPA based on additional manufacturers data supplied by the Permittee.

4a. The only fuel fired in the heater shall be natural gas.

b. The heat input of the fuel heater shall be less than 10 million Btu/hr.

c. The fuel heater shall be maintained and operated with good combustion practices to reduce emissions.

5. This permit is issued based on negligible emissions of organic material from the fuel oil storage tanks. For this purpose emissions from these tanks combined shall not exceed a nominal emission rate of 0.44 ton/yr.

6a. The emission of smoke or other particulate matter from an emission unit shall not have an opacity greater than 30 percent, pursuant to 35 IAC 212.123(a), except as allowed by 35 IAC 201.149, 212.123(b) or 212.124.

b. For the turbines, opacity in excess of the above limit is allowed during startup in accordance with 35 IAC 201.149. Detailed provisions governing the practices that the Permittee must follow for startup to minimize such excess emissions will be established by the Illinois EPA when an operating permit is issued.

7a. Under this permit, each emission unit may be operated for a period of up to 180 days from initial startup to allow for equipment shakedown and emissions testing. This period may be extended by the Illinois EPA upon request of the Permittee if additional time is needed to complete startup or perform emission testing.

b. Upon successful completion of emission testing of the turbines demonstrating compliance with applicable limitations, the Permittee may continue to operate the facility as allowed by Section 39.5 (5) of the Environmental Protection Act.

8. The Permittee shall furnish the Illinois EPA with written notification as follows:

   a. The date construction of each turbine commenced, postmarked no later than 30 days after such date, pursuant to 40 CFR 60.7(a)(1).

   b. The anticipated date of initial startup of the turbine, postmarked not more than 60 days nor less than 30 days prior to such date, pursuant to 40 CFR 60.7(a)(2).

   c. The actual date of initial startup of the turbine, postmarked within 15 days after such date, pursuant to 40 CFR 60.7(a)(3).

9a. Within 60 days after achieving the maximum production rate at which the stationary gas turbines will be operated, but not later than 180 days after initial startup of a turbine, the NO_X and CO, and oxygen (O_2) concentrations in the exhaust of the turbines shall be measured by an approved independent testing service in the following manner:

   i. Separate tests shall be conducted for burning of natural gas and oil.

   ii. The NO_X emission rate shall be computed for each run using the equation in 40 CFR 60.335(c)(1).

   iii. Method 20 of 40 CFR 60, Appendix A, shall be used to determine the NO_X and O_2 concentrations. The span values shall be 300 ppm of NO_X and 21 percent O_2, pursuant to 40 CFR 60.335(c)(3).

iv. The NO_X emissions shall be determined across the normal operating range of the turbine, including the minimum point in the range and peak load, pursuant to 40 CFR 60.335(c)(2).

v. All loads shall be corrected to ISO conditions using the appropriate equations supplied by the manufacturer, pursuant to 40 CFR 60.335(c)(2).

vi. Method 10 of 40 CFR 60, Appendix A, shall be used to determine CO concentrations at peak turbine load.

vii. The test at each load shall consist of three separate runs each at least 60 minutes in duration. Compliance shall be determined from the average of the runs provided that the Illinois EPA may accept the arithmetic mean of two of the runs in circumstances described in 40 CFR 60.8(f).

b. Performance and certification tests shall be conducted and data collected in accordance with the test methods and procedures specified in 40 CFR 60.11, 60.335 and 40 CFR 75 for acid rain affected units. In particular, the water to fuel ratio necessary for compliance shall be determined at four points in the normal operating range of the turbines.

c. The Permittee shall submit a test plan to the Illinois EPA at least 60 days prior to testing. As part of this plan, the Permittee may propose for approval by the Illinois EPA a strategy for performing emission testing of selected turbines provided that all turbines are fitted for testing. The Permittee may also propose a strategy for testing across the normal load range of the turbines and for testing for oil firing. The Permittee shall include the analytical methods and procedures used to determine the nitrogen content of the fuel oil being fired.

d. The Illinois EPA shall be notified prior to these tests to enable the Illinois EPA to observe these tests. Notification of the expected date of testing shall be submitted a minimum of 30 days prior to the expected date. Notification of the actual date and expected time of testing shall be submitted a minimum of 5 working days prior to the actual date of the test. The Illinois EPA may, at its discretion, accept notifications with shorter advance notice provided that the Illinois EPA will not accept such notifications if it interferes with the Illinois EPA's ability to observe the testing.

e. The Final Report for these tests shall be submitted to the Illinois EPA within 60 days after the date of the tests. The Final Report shall include as a minimum:

i. A summary of results.

ii. General information.

iii. Description of test method(s), including description of sampling points, sampling train, analysis equipment, and test schedule.

iv. Detailed description of test conditions, including:

A. Process information, i.e., mode(s) of operation and fuel consumption (standard ft^3 or gallons);

B. Firing rate (million Btu/hr); and

C. Turbine/Generator output rate (MW).

v. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.

10. The Permittee shall install, operate, and maintain each turbine with a continuous monitoring systems to measure and record the consumption of natural gas and oil, and the ratio of water to fuel being fired, when using water injection to control NO_X emissions, pursuant to 40 CFR 60.334 (a).

11. The Permittee shall determine and record the sulfur content of fuel fired in the CT in accordance with applicable provisions of the federal Acid Rain program, i.e., in Section 2.3.1 and in Section 2.2 of Appendix D to 40 CFR Part 75, for natural gas and oil, respectively.

12. The Permittee shall comply with applicable provisions of 40 CFR 60.334(b) with respect to determination of sulfur and nitrogen content of fuels fired in the CT unless USEPA approves alternate provisions for sampling of fuel, in which case the Permittee shall comply with such alternate provisions.

13a. The Permittee shall install, operate, and maintain a Continuous Emissions Monitoring (CEM) system on turbines to measure emissions of NO_X. The applicable procedures under 40 CFR 75.12 and 40 CFR 75, subpart H shall be followed for the installation, evaluation, and operation of this NO_X CEM system.

b. The Permittee shall install, operate, and maintain a CEM system on the turbine to measure emissions of SO_2 according to the applicable procedures under 40 CFR 75.11(d), or the Permittee shall conduct fuel monitoring for fuels fired in the turbines according to the procedures in 40 CFR 75, Appendix D.

14a. The Permittee shall maintain records of the following items:

i. The sulfur and nitrogen content of the fuel, as determined in accordance with Condition 11 and Condition 12;

ii. Consumption of natural gas, consumption of oil, and ratio of water to fuel being fired for each turbine, as determined in accordance with Condition 10;

iii. Operating hours for each turbine, on a daily basis; and

iv. Emissions of NO_X and SO_2, as determined in accordance with Condition 13.

b. The Permittee shall keep a maintenance/repair log for each turbine, including a log for the water injection system on each turbine.

c. The Permittee shall maintain following records related to startup, malfunction and breakdown, and shutdown of each turbine, including the water injection system:

   i. The time and date of startup, malfunction or breakdown, and shutdown and confirmation that standard practices were followed; and

   ii. Each incident when operation of a turbine continued during malfunction or breakdown with excess emissions, including the following information:

      A. Date and duration of malfunction or breakdown;

      B. A description of the malfunction or breakdown;

      C. The reason continued operation was necessary, including supporting documentation; and

      D. The corrective actions used to reduce the quantity of emissions and the duration of the incident;

d. The Permittee shall maintain the following records on at least a quarterly basis:

   i. Heat content of the each fuel being fired during the quarter, with supporting documentation;

   ii. The consumption of oil by the facility for each month since the previous record and the annual consumption of oil based on a running total of 12 months of data;

   iii. The daily emissions of NO_X, SO_2, PM, VOM and CO for each day since the previous record with supporting calculations; and

   iv. The annual emissions of NO_X, SO_2, PM, VOM and CO for each day since the previous record based on a running total of 365 days of data.

e. The Permittee shall maintain records that identify:

   i. Any periods during which a continuous monitoring system was not operational, with explanation;

   ii. Any 1-hour period during which the average water to fuel ratio, as measured by the continuous monitoring system, falls below the water-to-fuel ratio determined by test to be necessary to comply with requirements for NO_X emissions, with the average water-to-fuel ratio, average fuel consumption, ambient conditions and turbine load;

iii. Any period when the turbine was in operation during which ice fog was deemed to be a traffic hazard, the ambient conditions existing during the periods, the date and time the water injection system was deactivated, and the date and time the system was reactivated;

iv. Any day in which emission exceeded an applicable standard or limit; and

v. Any day in which emission or opacity exceeded an applicable limit standard or limit, with explanation.

f. These records shall be retained for at least three years at a readily accessible location at the facility and shall be available for inspection and copying by the Illinois EPA.

15a. Pursuant to 40 CFR 60.7(c) and 60.334(c), a report shall be submitted by the Permittee to the Illinois EPA on a quarterly basis no later than 30 days after the end of the calendar quarter. This report shall contain information on any one-hour period when the average water to fuel ratio falls below the ratio needed to show compliance. For such periods, the report shall include the actual water to fuel ratio, average fuel consumption, ambient conditions and turbine load.

b. If there is any other exceedance of the requirements of Conditions 1 through 4 of this permit, as determined by the records required by this permit, the Permittee shall submit a report within 30 days after the exceedance. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.

16. Two copies of required reports and notifications concerning equipment operation or repairs, performance testing, or a continuous monitoring system shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276
Telephone: 217/782-5811 Fax: 217/524-4710

and one copy shall be sent to the Illinois EPA's regional office at the following address, unless otherwise indicated:

Illinois Environmental Protection Agency
Division of Air Pollution Control
2009 Mall Street
Collinsville, IL 62234
Telephone: 618/346-5120 Fax: 618/346-5155

It should be noted that this permit has been revised to clarify applicable provisions for sampling and analysis of fuel, pursuant to a request from the Permittee (refer to Condition 11 and 12).

If you have any questions concerning this permit, please contact Manish Patel at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

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cc: Region 3